

GR

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-24. (Canceled)

25. (Previously Presented) A fuel dispensing method with radio frequency customer identification capabilities for charging a customer for sales transacted by the customer at one of a plurality of fuel dispensers located in a fuel dispensing area in which vehicles may drive through and may stop in order to receive fuel from one of the fuel dispensers, each of the fuel dispensers requiring activation by the customer in order to initiate a transaction resulting in a sale, the method comprising:

emitting radio frequency signals from a plurality of first antennas in such a manner that a plurality of first, independent, electromagnetic fields of predetermined operable range are created adjacent the fuel dispensers such that each said first electromagnetic field corresponds to one dispenser and the operable range of each said first electromagnetic field does not overlap the operable range of another said first electromagnetic field corresponding to a different dispenser;

determining whether a vehicle-mounted transponder containing customer identification data is within the operable range of one of said first electromagnetic fields whereupon the customer identification data contained in the vehicle-mounted transponder is received by a reader associated with the fuel dispenser corresponding to the electromagnetic field which the vehicle-mounted transponder is within;

if a vehicle-mounted transponder is determined to be within the operable range of one of said first electromagnetic fields, providing an in-range indication to the customer that the vehicle-mounted transponder is within the electromagnetic field;

determining whether the dispenser has been activated by the customer;

if there has been a determination that there has been an activation of the dispenser associating the customer identification data received by the reader from the vehicle-mounted transponder with a transaction at the activated dispenser, whereupon the transaction at the activated dispenser is permitted and charged to the customer according to the customer identification data;

emitting radio frequency signals from a plurality of second antennas in such a manner that a plurality of second, independent electromagnetic fields of predetermined operable range are created adjacent said fuel dispensers such that each said second electromagnetic field corresponds to one dispenser and the operable range of each said second electromagnetic field does not overlap the operable range of another said second electromagnetic field corresponding to a different dispenser, and wherein said second electromagnetic fields have relatively small operable ranges in relation to the operable ranges of said first electromagnetic fields;

determining whether a hand-held transponder containing customer identification data is within the operable range of one of said second electromagnetic fields whereupon the customer identification data contained in the hand-held transponder is received by a reader associated with the fuel dispenser corresponding to the electromagnetic field which the hand-held transponder is within;

if a hand-held transponder is determined to be within the operable range of one of said second electromagnetic fields, determining whether the fuel dispenser corresponding to the electromagnetic field that the hand-held transponder is within has been activated by the customer;

if a hand-held transponder is determined to be within the operable range of one of said second electromagnetic fields and there has been a determination that there has been an activation of the corresponding fuel dispenser, associating the customer identification data received by the reader from the hand-held transponder with a transaction at the activated dispenser, whereupon the transaction at the activated dispenser is permitted and charged to the customer according to the customer identification data from the hand-held transponder; and

if a vehicle-mounted transponder is determined to be within the operable range of one of said first electromagnetic fields and if a hand-held transponder is determined to be within the operable range of one of said second electromagnetic fields corresponding to the same fuel dispenser, then overriding the use of the customer identification data from the vehicle-mounted transponder so that the customer identification data from the hand-held transponder may be used to process the transaction at the fuel dispenser.

26. (Canceled)

27. (Previously Presented) The method of claim 25 wherein the dispenser is a fuel dispenser having a nozzle, and activation of the dispenser comprises lifting the nozzle.

28. (Previously Presented) The method of claim 25 wherein the dispenser is a fuel dispenser having a nozzle lever, and activation of the dispenser comprises lifting the nozzle lever.

29. (Previously Presented) The method of claim 25 wherein the antenna is a hand-held antenna which may be waved in front of the vehicle mounted transponder for placing the transponder in dispenser range.

30. (Previously Presented) The method of claim 25 wherein the vehicle to which a vehicle-mounted transponder is mounted includes an on-board computer and the vehicle-mounted transponder is linkable to the on-board computer for reading vehicle diagnostic information for transmission from the vehicle-mounted transponder to one of the first antennas.

31. (Previously Presented) The method of claim 25 wherein said fuel dispensing area includes a service station building, a reader placed inside said service station building, and at least one third antenna associated with said service station building reader, said method further comprising:

emitting radio frequency signals from said third antenna in order to create an electromagnetic field of predetermined operable range in said service station building for use with a hand-held transponder for completing transactions at the service station building.

32. (Previously Presented) The method of claim 25 wherein a reader is associated with a car wash for use of the transponder for completing a car wash transaction.

33-49. (Canceled)

50. (Previously Presented) A dispensing system with radio frequency customer identification capabilities for charging a customer for sales transacted by the customer, the system comprising:

- a plurality of transponders containing customer identification data, the plurality of transponders comprising at least one vehicle-mounted transponder and at least one hand-held transponder;

- a dispenser having at least one associated dispensing area at which a customer may conduct a dispensing transaction with the dispenser;

- a plurality of antennas, each including at least one long-range antenna having a predetermined operable long range in the dispensing area and at least one short range antenna having a predetermined operable short range in the dispensing area of the dispenser, the long-range antenna being located relative to the dispenser for use in connection with the vehicle-mounted transponder, and the short-range antenna being located relative to the dispenser for use in connection with the hand-held transponder;

- at least one reader operably connected to the antennas to emit radio frequency signals from the long range antenna within the predetermined operable long range of the dispensing area and from the short range antenna within the predetermined operable short range of the dispensing area, and to receive customer identification data from the vehicle-mounted transponder or the handheld transponder responsive to the emitted radio frequency signals when the vehicle-mounted transponder or the hand-held transponder is within the predetermined operable range of the respective long-range antenna or short-range antenna associated with the dispensing area; and

processing equipment in communication with the at least one reader and the dispenser for associating customer identification data received at the dispensing area with a transaction at the dispenser, whereupon the transaction at the dispenser is charged to the customer according to the customer identification data, the processing equipment being operable to override the use of the vehicle-mounted transponder for charging the transaction to the customer and instead allowing use of the hand-held transponder for charging the transaction to the customer when both the vehicle-mounted transponder and hand-held transponder are within the respective predetermined operable long range and short range of the dispensing area.

51. (Previously Presented) The system of claim 50 further comprising an in-range indicator associated with the dispenser and responsive to said vehicle-mounted transponder or the hand-held transponder being within the predetermined range of the respective long-range antenna or short-range antenna.

52. (Canceled)

53. (Previously Presented) The system of claim 50 wherein the predetermined operable long range comprises a vehicle fueling distance from the dispenser.

54. (Previously Presented) The system of claim 50 wherein the predetermined operable short range comprises a location within several inches from the short-range antenna in which the hand-held transponder may be waived by the customer.

55. (Previously Presented) A fuel dispensing method with radio frequency customer identification capabilities for charging a customer for sales transacted by the customer, the method comprising:

determining whether a vehicle-mounted transponder containing customer identification data is within a vehicle fueling range of a dispenser, the dispenser requiring activation by the customer to initiate a transaction and including a reader associated therewith for emitting from a first antenna radio frequency signals within the vehicle fueling range, and for receiving customer

identification data from the transponder responsive to the emitted radio frequency signals received by the transponder;

determining whether a hand-held transponder containing customer identification data is within a close range of the dispenser, the close range being smaller than the vehicle fueling range, the reader including a second antenna for emitting radio frequency signals within the close range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder;

providing an in-range indication to the customer when a vehicle-mounted transponder is within the vehicle fueling range or a hand-held transponder is within the close range;

determining whether the dispenser has been activated by the customer;

if there has been a determination that there has been an activation of the dispenser, associating the customer identification data received by the reader from either the vehicle-mounted transponder or the hand-held transponder with a transaction at the activated dispenser, whereupon the transaction at the activated dispenser is permitted and charged to the customer according to the customer identification data; and

if both a vehicle-mounted transponder and a hand-held transponder are determined to be within the respective vehicle fueling range and close range before the dispenser is activated, overriding the use at the dispenser of the vehicle-mounted transponder, whereupon following activation of the dispenser the hand-held customer identification data received by the reader is associated with a transaction at the activated dispenser, the transaction at the activated dispenser is permitted and charged to the customer according to the hand-held transponder customer identification data.

56. (Previously Presented) A fuel dispensing method with radio frequency customer identification capabilities for charging a customer for sales transacted by the customer, the method comprising:

determining whether a vehicle-mounted transponder containing customer identification data is within a vehicle fueling range of a dispenser, the dispenser requiring activation by the customer to initiate a transaction and including a reader associated therewith for emitting from a

first antenna radio frequency signals within the vehicle fueling range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder;

determining whether a hand-held transponder containing customer identification data is within a close range of the dispenser, the close range being smaller than the vehicle fueling range, the reader including a second antenna for emitting radio frequency signals within the close range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder; and

associating the customer identification data received by the reader from either the vehicle-mounted transponder or the hand-held transponder with a transaction at the dispenser, whereupon the transaction at the dispenser is permitted and charged to the customer according to the customer identification data; and

provising an in-range indication to the customer when a vehicle-mounted transponder is within the vehicle fueling range or a hand-held transponder is within the close range.

57. (Previously Presented) A fuel dispensing method with radio frequency customer identification capabilities for charging a customer for sales transacted by the customer, the method comprising:

determining whether a vehicle-mounted transponder containing customer identification data is within a vehicle fueling range of a dispenser, the dispenser requiring activation by the customer to initiate a transaction and including a reader associated therewith for emitting from a first antenna radio frequency signals within the vehicle fueling range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder;

determining whether a hand-held transponder containing customer identification data is within a close range of the dispenser, the close range being smaller than the vehicle fueling range, the reader including a second antenna for emitting radio frequency signals within the close range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder;

associating the customer identification data received by the reader from either the vehicle-mounted transponder or the hand-held transponder with a transaction at the dispenser, whereupon the transaction at the dispenser is permitted and charged to the customer according to the customer identification data; and

if both a vehicle-mounted transponder and a hand-held transponder are determined to be within the respective vehicle fueling range and close range, overriding the use at the dispenser of the vehicle-mounted transponder, whereupon the hand-held customer identification data received by the reader is associated with a transaction at the dispenser, and the transaction is permitted and charged to the customer according to the hand-held transponder customer identification data.

58. (Canceled).

59. (New) A method for authorizing a dispensing transaction comprising the steps of:

determining whether a hand-held transponder containing customer identification data is within range of a dispenser, the dispenser requiring activation by the customer to initiate a transaction and including a reader associated therewith for emitting radio frequency signals within the dispenser range, and for receiving customer identification data from the transponder responsive to the emitted radio frequency signals received by the transponder, wherein the transponder comprises a handheld transponder containing customer identification data;

determining whether the dispenser has been activated by the customer following the determination that the transponder is within the dispenser range; and

upon activation of the dispenser following the determination that the transponder is within the dispenser range, associating the customer identification data received by the reader with a transaction at the activated dispenser, whereupon the transaction at the activated dispenser is permitted and charged to the customer according to the customer identification data, wherein the reader is provided with a first antenna that is adapted to emit and receive radio frequency signals within the dispenser range, wherein the receipt of radio frequency signals includes receiving customer identification data.

60. (New) The method of claim 59, further comprising the steps of:
determining whether a customer account corresponding with the customer identification data is valid prior to permitting the transaction at the activated dispenser; and
authorizing a charge of the transaction only to a valid customer account.

61. (New) The method of claim 60, wherein determining the validity of the customer account includes accessing a remote card processing network for account verification.

62. (New) The method of claim 60, wherein determining the validity of the customer account includes accessing a local file for account verification.

63. (New) The method of claim 60, wherein determining the validity of the customer account occurs after the at least one dispenser is activated.

64. (New) The method of claim 60, wherein determining the validity of the customer account occurs prior to the activation of the at least one dispenser.

65. (New) The method of claim 60, wherein the dispenser comprises a fuel dispenser.

66. (New) The method of claim 59, further comprising the step of providing an in-range indication when the transponder is within the dispenser range.

67. (New) The method of claim 66, further comprising the step of cancelling the transaction prior to charging the customer's account upon a determination that a predetermined time limit for activating the dispenser is exceeded.